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A STUDY OF AWARENESS TOWARDS ELECTRONIC WASTE AMONG COLLEGE STUDENTS

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Abstract:-The present study was undertaken to study the awareness towards electronic waste among college students. For this investigation a sample of 200 students studying in different colleges of Ambala affiliated to Kurukshetra University, Kurukshetra were taken. Objectives of the study were (1) to study the awareness towards electronic waste among male and female college students (2) to study the awareness towards electronic waste among the college students of science and humanities stream and (3) to study the awareness towards electronic waste among high and low socio-economic status college students. The results revealed no significant difference in the awareness towards electronic waste between the Male and Female college students. The study further revealed no significant difference in the awareness towards electronic waste between the college students of science and humanities stream. Also no significant difference was found in the awareness towards electronic waste between high and low socio-economic status college students.

Keywords: Awareness, Electronic Waste, College students

INTRODUCTION

The Indian information technology (IT) industry has been one of the major drives of change in the economy in the last decade and has contributed significantly to the digital revolution being experienced by the world. New electronic gadgets and appliances have infiltrated every aspect of our daily lives, providing our society with more comfort, health and security and with easy information acquisition and exchange.

But, the knowledge society however is creating its own toxic footprints. The consequence of its consumer oriented growth combined with rapid product obsolescence and technological advances are posing a new environmental challenge - the growing menace of "Electronics Waste" or "e waste" that consists of obsolete electronic devices. It is an emerging problem as well as a business opportunity of increasing significance, given the volumes of e-waste being generated and the content of both toxic and valuable materials in them. E-waste is the term used to describe old, end-of-life electronic appliances such as computers, laptops, TVs, DVD players, mobile phones, and mp3 players etc which have been disposed by their original users. In other words, E-waste comprises of wastes generated from used electronic devices and house hold appliances which are not fit for their original intended use and are destined for recovery, recycling or disposal. Such wastes encompasses wide range of electrical and electronic devices such as computers, hand held cellular phones, personal stereos, including large household appliances such as refrigerators, air conditioners etc. E-wastes contain over 1000 different substances many of which are toxic and potentially hazardous to environment and human health, if these are not handled in an environmentally sound manner.

RELATED LITERATURE

Sachan and Aggarwal (2013) assessed the knowledge of young adults towards e-waste. A total of 120 respondents (60 from semiurban) were selected from Lucknow city. The study findings revealed that the majority of respondents (60.8 percent) were having medium knowledge about e-waste whereas only 1.7 percent respondents were having low knowledge about e-waste. It was also found that respondents of semi-urban area were having more medium knowledge than respondents of urban area. There was significant difference between age of respondents and knowledge of respondents about e-waste which concludes that knowledge level may vary according to age. Also there was no significance difference between of sex of

respondents and knowledge of respondents about e-waste which concludes that knowledge may not vary according to sex. Bala and Goel (2013) investigated the awareness of college-going students about existence, danger and management of e-waste. A sample of 200 students including students of professional streams and non-professional stream was selected from different colleges of Noida city through simple random sampling technique. The findings revealed that all the students irrespective of their stream are having awareness of existence of e-waste. But the students of professional stream are having more awareness of danger of e-waste than the students of non-professional stream and students of both the streams were unaware of e-waste management. Ercan and Bilen (2014) examined primary school second level students' electronic waste awareness and environmental attitudes. Results of the study presented meaningful relationships between students' environmental attitudes and the type of school they attend to and parental income level while no meaningful relationships were found between environmental attitudes and variables of gender, grade and mother's or father's educational levels. Electronic waste survey results revealed that students have insufficient information or are misinformed about electronic wastes.

Keeping in view the findings of the above researches, the investigator of the present study has made an honest attempt to study the awareness towards electronic waste among college students

SIGNIFICANCE OF THE STUDY

In the present scenario, where growth and development is given the utmost priority, the side effects coming along with it is neglected. While using the faster and smarter gadgets and that too in large quantities the user fails to understand that the performance delivering gadgets will soon become e-waste once they get outperformed. The environmental impact caused by this e-waste is irreversible and is yet to be realized by masses, particularly in developing countries. The end user is concerned only with the use of gadget but is unaware of what happens to it once it is disposed off. An overview of the user population shows that the general disposal techniques adopted are scrapping, exchange for new gadgets, storing at home. The disposer's involvement end at this point. They are not aware of the potential negative impact of the rapidly increasing use of computers, monitors, and televisions. When these products are placed in landfills or incinerated, they pose health risks due to the hazardous materials they contain. If this massive amount of stored electronic waste (e-waste) were to enter the municipal waste stream, the toxins in it could result in severe negative environmental and health impacts. In addition, valuable materials from the computers would be lost due to the lack of effective recycling. E-waste constitutes only 1.5-8 percent of municipal solid waste, yet it is accumulating at a rate three times that of other solid waste. This is all because of lack of information- the average citizen has no idea about e-waste and the problems it is causing for our environment. So, there is need to make general public including the upcoming future i.e the school and college going students aware about the hazardous impact of e-waste on environment as well as on human health.

OBJECTIVES

- 1.To study the awareness towards electronic waste among male and female college students.
- 2.To study the awareness towards electronic waste among the college students of science and humanities stream.
- 3.To study the awareness towards electronic waste among high and low socio-economic status college students.

HYPOTHESES

1. There exists no significant difference in the awareness towards electronic waste between male and female college students.
2. There exists no significant difference in the awareness towards electronic waste between the college students of science and humanities stream.
3. There exists no significant difference in the awareness towards electronic waste between high and low socio economic status college students.

METHOD USED

The present study is descriptive in nature. To carry out the above said exploration and to meet objectives of the study descriptive survey method of investigation was employed. The statistical treatment was given to arrive at results. Statistics namely mean, standard deviation, and t-test were used by the investigator.

SAMPLE

In the study, the investigator used simple random sampling technique for selecting the sample. The sample consisted of 200 students studying in different colleges of Ambala affiliated to Kurukshetra University, Kurukshetra .

TOOLS USED

In this study, a scale to measure awareness towards electronic waste constructed by the investigator herself was used.

It is a Likert type scale having 25 statements; 6 of them are negative statements and remaining are positive statements. Each statement is set against a five point scale of 'Strongly Agree', 'Agree', 'Undecided', 'Disagree', 'Strongly Disagree' and weighs 4,3,2,1,0 for positive statements and 0,1,2,3,4 for negative statements. An individual score is the sum of all the scores of the 25 items.

To know the socio-economic status of the college students Socio-Economic Status Scale developed and standardized by Rajbir Singh, Radhey Shyam and Satish Kumar was used by the investigator.

RESULTS AND DISCUSSION

Table 1

Significance of Difference in the Awareness towards Electronic Waste between Male and Female College Students.

Group	N	Mean	SD	SED	t-value	Level of Significance
Male	100	68.19	7.21	0.99	0.69	N.S
Female	100	67.51	6.78			

Table -1 shows that the 't' value calculated from the mean scores of awareness towards e-waste between Male and Female college students is 0.69 which is smaller than the critical value 1.98 at 0.05 level. Consequently, the null hypothesis is accepted, and it can be said that there is no significant difference in the awareness towards Electronic Waste between Male and Female College Students.

Table 2

Significance of Difference in the Awareness towards Electronic Waste between the College Students of Science and Humanities Stream.

Group	N	Mean	SD	SED	t-value	Level of Significance
Science	100	68.48	6.96	0.98	1.28	N.S
Humanities	100	67.22	6.99			

Table -2 shows that the 't' value calculated from the mean scores of awareness towards e-waste between the college students of science and humanities stream is 1.28 which is smaller than the critical value 1.98 at 0.05 level. Consequently, the null hypothesis is accepted, and it can be said that there is no significant difference in the awareness towards electronic waste between the college Students of Science and Humanities Stream.

Table 3

Significance of Difference in the Awareness towards Electronic Waste between High and Low Socio- Economic Status College Students.

Group	N	Mean	SD	SED	t-value	Level of Significance
High Socio-economic status	100	68.42	6.63	0.92	1.23	N.S
Low socio-economic status	100	67.29	6.32			

Table -3 shows that the 't' value calculated from the mean scores of awareness towards e-waste between high and low socio-economic status college students is 1.23 which is smaller than the critical value 1.98 at 0.05 level. Consequently, the null hypothesis is accepted, and it can be said that there is no significant difference in the awareness towards electronic waste between high and low socio-economic status college Students.

FINDINGS

On the basis of above following findings were drawn:

- 1) There is no significant difference in the awareness towards electronic waste between the Male and Female college students. As the mean scores of Male college students (68.19) is greater than the mean scores of Female college students (67.51), so it can

be concluded that the Male college students are more aware about electronic waste than Female college students.

2) There is no significant difference in the awareness towards electronic waste between the college students of science and humanities stream. As the mean scores of science stream college students (68.48) is greater than the mean scores of humanities stream college students (67.22), so it can be concluded that the science stream college students are more aware about electronic waste than humanities stream college students.

3) There is no significant difference in the awareness towards electronic waste between high and low socio-economic status college students. As the mean scores of high socio-economic status college students (68.42) is greater than the mean scores of low socio-economic status college students (67.29), so it can be concluded that the high socio-economic status college students are more aware about electronic waste than low socio-economic status college students.

CONCLUSION AND SUGGESTIONS

E-waste has emerged as perhaps the most critical waste disposal issue of the twenty-first century. The toxic components such as lead, mercury, brominated flame retardants and chromium along with other hazardous chemicals when released into the environment pose a threat today and tomorrow as well as for the future generations that follow. The fact is that only a very small amount of discarded devices are being recycled as well the consumers are not aware about its hazardous effect on environment and human beings. The truth is that this needs to change otherwise the time will arrive that nobody will be able to survive on this beautiful green planet.

For this purpose awareness raising programmes and activities on issues related to the environmentally sound management (ESM), health and safety aspects of e-wastes in order to encourage better management practices should be implemented for different target groups. Technical guidelines for the ESM of e-wastes should be developed as soon as possible. General Citizens should be made aware of 3R's – Reduce, Re-use and Recycle. They should be encouraged to make environmentally sound choices that lead to waste minimization. Their negative perspectives on waste reduction should be changed as well they should be realized how easy it to follow the 3R's. Similarly, the value of being the an eco-citizen should be inculcated in the school and college going students so that each individual as he/she grows up would also share the eco-wisdom and apply those principles in their lives.

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